



CENTRAL PIEDMONT COMMUNITY COLLEGE

Course Syllabus AUT 110-10

Introduction to Automotive Technology

Syllabus Contents:

- Course Description
- Course Objectives
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- Safety Regulations
- Tool List

Time Requirements:

- 8 Weeks
- 4 Class Hours/ Week
- 4 Lab Hours/ Week
- 3 Semester Hours Credit

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Office hours: By appointment

AUT 110-04
Introduction to Automotive Technology

Prerequisites: None

Course Description:

This course covers the basic concepts and terms of automotive technology, workplace safety, North Carolina state inspection, safety and environmental regulations, and use of service information resources. Topics include familiarization with components along with identification and proper use of various automotive hand and power tools. Upon completion, students should be able to describe terms associated with automobiles, identify and use basic tools and shop equipment, and conduct North Carolina safety/emissions inspections.

AUT 110-04
Introduction to Automotive Technology
COURSE OBJECTIVES

Upon completion of this course, student should be able to:

1. Describe the basic concepts and terms of automotive technology, workplace safety, safety and environment regulations, and use of service information resources.
2. Conduct North Carolina safety and OBD II emissions inspections.
3. Identify and describe proper, safe use of automotive shop equipment.
4. Describe OSHA rules concerning exposure to blood borne diseases.
5. Describe and demonstrate emergency and building evacuation procedures.
6. Identify and use service information resources, interpret vehicle identification numbers (VIN) and underhood emissions decals.
7. Locate and describe MSDS's and Right-to-Know laws.
8. Describe the toxic effects of carbon monoxide and demonstrate proper engine exhaust gas removal from shop.
9. Describe proper disposal of automotive waste products, including hazardous wastes.
10. Describe and demonstrate professional behavior, describe normal customer and employer expectations.
11. Inspect, replace, and aim headlights and bulbs.
12. Demonstrate proper wheel removal and installation.
13. Discuss and demonstrate proper procedure for tire mount and balance.
14. Demonstrate and instruct on the use of Scan Tools Manufacturer specific and Generic

WEEKLY OUTLINE
AUT 110-04
INTRODUCTION TO AUTOMOTIVE TECHNOLOGY

Required Text: NC DMV OBD I/M Training Manual cost = \$15.00
Safety/Emission Manual cost = \$6.00

GENERAL MOTORS ASEP Embedded Course Text 16048.15, 16040.02

Week 1: Day 1

- A. Orientation: Review course syllabus, grading policy and safety regulation.
- B. View blood borne pathogens video and discuss blood borne diseases.
- C. Discuss Labs, Classrooms, and proper student behavior when in those areas of study, Discuss repair orders.

Week 2: Day 2 A. Video: "Shop Safety"

- B. Discuss general shop safety. Basic hand care and fire extinguishers
- C. Student shop tour
- D. Discuss Material Safety Data Sheets (MSDS) Location and Right to Know Laws
- E. Discuss fire extinguisher usage and location
- F. Handout: "Labeling and Marking of Hazardous Materials"

WEEK 2: Day 1

- A. Video: "Hand Tool Safety in the Workplace"
- B. Discuss general tool safety, Discuss tools and equipment used at CPCC
- C. Lab Activity Sheet #8
- D. Lab Activity Sheet 9-1 & 9-2

Day 2

Quiz: Shop Tools, Identification and Tool Safety

- A. Video: "Lifting It Right"
- B. Discuss shop lifting equipment/procedures for raising vehicles
- C. Lab Activity Sheet #1-3

WEEK 3: Day 1

- A. Discuss VIN numbering and locations, Discuss "How To Find" information service manuals, (paper and CD-ROM types), Owners Manuals, and TSB's
- B. Handout: VIN number decoding (Manufacture Specific)
- C. Lab Manual Activity Sheet # 2 Pgs. 173-174
- D. Worksheet: "Working with Service Manuals"

Day 2

Quiz: Service Information & VIN Numbers

- A. Fundamentals of proper wheel removal and installation on late model vehicles.
- B. Discuss and demonstrate proper procedure for tire mount and balance.

WEEK 4: Day 1

Scan Tool – Hook Up and Operation

Day 2

Scan Tool – Hook Up and Operation

WEEK 5: Day 1

A. N. C. Safety Inspection

Day 2

A. N. C. Safety Inspection (continued)

WEEK 6: Day 1

A. N. C. Safety Inspection (continued)

Test: N.C. Safety Inspection

Day 2

A. N. C. OBD II Emissions Inspection

WEEK 7: Day 1

A. N. C. OBD II Emissions Inspection (continued)

TEST: N.C. OBD II Emissions Inspection

Day 2

- A. Oil Change Fundamentals
- B. Special Tools, Procedures and Safety Precautions

WEEK 8: Day 1

- A. Video: “What’s the Deal on Dealerships?”
- B. Handout: “ASE Registration Booklet”
- C. Discuss customer relations and expectations

Day 2

- A. Clean up shop and classroom
- B. Make-up day for tests and outstanding work
- C. Final Grades



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STUDENT GRADE POINT AVERAGE

Students will be graded according to the following grade point system.

Grade	Point Value	Description
A	4	Excellent
B	3	Very Good
C	2	Satisfactory
D	1	Poor
F	0	Failing
The following grades will not be used in computing the grade point average.		
I = Incomplete		W = Withdrawal
S = Satisfactory		U = Unsatisfactory
AUD = Audit		N = Never Attended
X = Credit by Examination		

- **Since this course is preparatory to entering the automotive service industry, job attitude, neatness, promptness and care of equipment will be considered part of the final grade. The final grade on these items will be determined by the instructor and based upon accepted industry standards.**

GRADING

- FOR A GRADE OF "A":**
 - Complete all written tests with an average of 93% to 100%.
 - Attend 90% of all scheduled class/lab hours.
 - Complete all lab/shop work in a manner as would be determined EXCELLENT in an actual shop.
- FOR A GRADE OF "B":**
 - Complete all written test with an average of 85% to 92%.
 - Attend 85% of all scheduled class/lab hours.
 - Complete all lab/shop work in a manner as would be determined VERY GOOD in an actual shop.
- FOR A GRADE OF "C":**
 - Complete all written tests with an average of 77% to 84%.
 - Attend 80% of scheduled class/lab hours.
 - Complete all lab/shop work in a manner as would be determined SATISFACTORY in an actual repair shop.
- FOR A GRADE OF "D":**
 - Complete all written tests with an average of 70% to 76%.
 - Attend 80% of all scheduled class/lab hours.
 - Complete all lab/shop work in a manner as would be determined POOR in an actual repair shop.



CENTRAL PIEDMONT COMMUNITY COLLEGE

Automotive Department Student Dress Code Effective August 2005

All automotive students will have and wear safety glasses at all times in shop or lab areas. Failure to adhere to safety glasses rules may result in disciplinary action.

1. All students are required to wear their dealer sponsored uniform to school each day. If a student has not been sponsored by a dealer, the student may purchase approved CPCC shirts from the school store. All shirts must be clean and tucked in. Rips and tears must be mended in a timely manner.
2. Dark colored work-style pants are recommended or Proper fitting jeans that meet the following requirements (length above the shoes, jeans above the hip with belt). No oversized jeans will be permitted. **Shorts are not allowed.** Rips and tears must be mended in a timely manner.
3. Facial jewelry of any type is **NOT** permitted. This includes ear, nose, lip, eyebrow, and cheek rings and/or studs. We also suggest that you refrain from wearing necklaces, rings, or bracelets of any kind as these items may pose a safety hazard.
4. All belts will be of the type that does not have an exposed buckle. No keys, chains or wallets hanging out of pockets.
5. Hats are permitted in the shop area only! If a hat has a brim, it must be worn with it facing forward.
6. Students must wear leather work boots or shoes with steel toes. We highly recommend oil resistant soles. No sneakers, tennis shoes, open toed shoes, or dress shoes are permitted.
7. Other appearance issues not directly covered by these rules will be considered on a case-by-case basis. CPCC staff will decide what is professional in appearance and what is not.

Any Student Not Following These Guidelines Will Be Dismissed From Class And Attendance Credit For That Day Will Not Be Given. No Excuses Will Be Considered.

- Students will bring tools required for class with them at class time.
 - **No Tools, No Lab Credit.**
- **Remember how you act and present yourself will reflect on the department and presentations to prospective employers.**

Automotive Department Student Guidelines / Expectations

- No tobacco products usage is allowed inside any college building at any time.
- Eating or drinking in classrooms is with permission of instructor only; **there will be no eating or drinking in shop or lab or lab areas.**
- Students are expected to be in class on time and will be held responsible for any information covered by instructor, even if late or absent. Tests and quizzes missed may be made up only with instructor permission.
- Missed or late assignments will affect student's course grade.
- Tardiness is a problem; any student who is over 15 minutes late for a class will be counted as absent. CPCC attendance policy is in the on line student handbook.
- Students are expected to conduct themselves in a mature manner at all times. Students caught cheating, fighting, stealing, spinning tires, vandalizing or purposely damaging a vehicle or equipment will be **EXPULSED** from the automotive program. Care should be shown to college vehicles and property.
- Leaving class or shop/lab early without instructor permission will not be tolerated.
- Students are expected to come prepared for class. This means with paper, textbook, pens, pencils or other required material.
- Cell phones and pagers must be turned off during all class or lab times. Cell phones may only be used outside of the automotive buildings. Cell phones which ring during class will be subject to forfeiture or may result in student loss of privilege.
- The area in front of the main lab is not a parking area for students. The laneway must remain open for emergency vehicles. Vehicles inappropriately parked will be ticketed and towed. No parking means No Parking.
- All students are expected to clean up and put away all tools and equipment used during class or lab before leaving. Housekeeping is very important and will be part of your grade.
- Whenever you are unsure about anything ask your instructor! It is your responsibility to make sure that no physical damage occurs to any vehicle that you are working on or driving. Students are responsible for their actions!
- **Safety glasses** and student tools are mandatory in all shop/lab areas, no exceptions.
- All vehicles brought into the main lab will have a CPCC work order filled out and visible on windshield.



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Automotive Technology, Tool List

Safety Glasses or Goggles Mandatory in Labs

- Toolbox
- Common slotted screwdrivers, 4"x3/16, 6"x1/4, 8"x1/4
- Phillips screwdrivers number 1 and number 2
- Torx bit set T10 to T60
- Standard combination wrench set 5/16 to 1 1/4"
- Metric combination wrench set 6mm to 22mm
- 16 oz ball peen hammer
- 6" needle nose pliers
- Regular slip joint pliers
- 10 or 12" Channel Lock pliers
- 6 or 7" side cutting pliers
- Set of punches and chisels
- Feeler gauge set
- 3/8 "drive socket set, including ratchet, extensions, standard and metric sockets,
 - 3/8 to 7/8 and 8mm to 17mm
- 3/8" to 1/2" socket adapter, 1/2" to.3/8" socket adapter
- 1/2" drive socket set with extensions and ratchet,
- 1/2" drive flex handle at least 18" long (breaker bar)
- 1/2" drive sockets, 7/16 to 1 1/4 and 10mm to 22mm
- 1/2" inch drive torque wrench
- Spark plug sockets 5/8" and 13/16" 3/8" drive
- Gasket scraper
- Set of Allen wrenches
- 12-volt test light
- 1/4" drive socket set, standard and metric sockets, including ratchet
- Non-sparking drift punch, brass or aluminum
- Digital Volt, Ohm and Ammeter DVOM, with Leads Example Fluke model 83

You may wish to purchase additional tools for the specific program you are enrolled in such as ASEP, BMW, T-TEN, CAP. Check with your instructor for a list.



Automotive Technology Safety Regulations

An Instructor must be present any time a class or session is working in the lab

Use of safety glasses is required/mandatory in lab areas.

- Any safety hazard will be reported to the instructor immediately. Floor will be kept clear of all liquids and tripping hazards.
- No equipment will be operated by students until they have received instruction on proper and safe operation of same equipment.
- Vehicle lifts must be secured with mechanical locks prior to working under vehicle
- Jack stands will be used when jacking up a vehicle for service.
- Brake asbestos "dust" will be controlled any time work is done which could lead to asbestos exposure.
- Floor exhaust system will be used anytime an engine is running in the lab.
- Use of tobacco is not permitted in any lab or classroom.
- Use of audio equipment is not permitted during class/lab hours.
- Students and faculty must follow OSHA rules concerning exposure to blood borne diseases.
- Proper disposal of automotive waste products, including hazardous wastes, is required.

AUT-110 SP2 Information

The website is.... <http://www.sp2.org/>

User Name is.... 22467

Password is....Kind

PIN# is.... The 1st initial of your 1st and last name and the last 4 digits of your student ID #

You are set up to do the following modules:

- 1) Mechanical Safety
- 2) Mechanical Pollution Prevention

Note : ALL tests must be completed for these modules. NOT just the final exam. SP2 must be completed by the end of this class for you to receive a grade. Failure to complete will result in an incomplete for the course.